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| APPLICATION NO. | FIL | ING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------|------------|----------------------|---------------------|------------------|
| 09/683,185 | 1 | 1/29/2001 | Albert Rabinovich | EH-10417 | 1030 |
| 30188 | 7590 | 08/20/2004 | | EXAM | MINER |
| PRATT & W | HITNE | Y | | YEE, DI | EBORAH |
| 400 MAIN ST MAIL STOP: | | | | ART UNIT | PAPER NUMBER |
| EAST HART | | T 06108 | | 1742 | |

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | Application No. | Applicant(s) | | | |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--|--|--|
| | | 09/683,185 | RABINOVICH ET AL. | | | |
| | Office Action Summary | Examiner | Art Unit | | | |
| | | Deborah Yee | 1742 | | | |
| Period fo | ு The MAILING DATE of this communication app or Renly | pears on the cover sheet with t | he correspondence address | | | |
| A SH THE - Exte after - If the - If NO - Failu Any | ORTENED STATUTORY PERIOD FOR REPL MAILING DATE OF THIS COMMUNICATION. nsions of time may be available under the provisions of 37 CFR 1.1 SIX (6) MONTHS from the mailing date of this communication. e period for reply specified above is less than thirty (30) days, a repl of period for reply is specified above, the maximum statutory period or to reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailined patent term adjustment. See 37 CFR 1.704(b). | 36(a). In no event, however, may a reply by within the statutory minimum of thirty (30 will apply and will expire SIX (6) MONTHS a, cause the application to become ABAND | be timely filed) days will be considered timely. from the mailing date of this communication. ONED (35 U.S.C. § 133). | | | |
| Status | | | | | | |
| 1)🖂 | Responsive to communication(s) filed on 16 J | Responsive to communication(s) filed on <u>16 June 2004</u> . | | | | |
| 2a)⊠ | This action is FINAL . 2b) ☐ This | s action is non-final. | | | | |
| 3)[| Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213. | | | | | |
| Disposit | ion of Claims | | | | | |
| 5)□ 6)⊠ 7)□ | 4) Claim(s) 1-3,5-10,12-33,37 and 38 is/are pending in the application. 4a) Of the above claim(s) 34-36 is/are withdrawn from consideration. 5) Claim(s) is/are allowed. 6) Claim(s) 1-3,5-10,12-33,37 and 38 is/are rejected. 7) Claim(s) is/are objected to. 8) Claim(s) are subject to restriction and/or election requirement. | | | | | |
| Applicat | ion Papers | | | | | |
| , | The specification is objected to by the Examine | <u>—</u> | | | | |
| 10) | 10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner. | | | | | |
| | Applicant may not request that any objection to the | | | | | |
| 11)□ | Replacement drawing sheet(s) including the correct The oath or declaration is objected to by the Ex | | - | | | |
| Priority (| under 35 U.S.C. § 119 | | | | | |
| a) | Acknowledgment is made of a claim for foreign All b) Some * c) None of: 1. Certified copies of the priority document 2. Certified copies of the priority document 3. Copies of the certified copies of the priority document application from the International Burea See the attached detailed Office action for a list | ts have been received. ts have been received in Appli rity documents have been rec u (PCT Rule 17.2(a)). | ication No reived in this National Stage | | | |
| Attachmen | ıt(s) | | | | | |
| _ | e of References Cited (PTO-892) | 4) 🔲 Interview Sumr | mary (PTO-413) | | | |
| 2) Notice 3) Information | ce of Draftsperson's Patent Drawing Review (PTO-948) mation Disclosure Statement(s) (PTO-1449 or PTO/SB/08) or No(s)/Mail Date | Paper No(s)/M | ail Date nal Patent Application (PTO-152) | | | |

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Election/Restrictions

- 1. Applicant's election with traverse of Group I, claims 1-3,5-10 and 12-33 in the reply filed on June 3, 2004 is acknowledged. The traversal is on the ground(s) that the restriction is improper because the inventions are not shown to be independent or distinct and that a serious burden on the Examiner does not exist. This is not found persuasive because of the following reasons:
- 2. Group I, claims 1-3,5-10 and 12-33, is directed to an apparatus and process of cooling a material having a first section and a second section by impingement cooling said first section with a fluid to increase a cooling rate of said first section relative to a cooling rate of said second section.
- 3. Group II, claims 34 to 36, is directed to a method of quenching a nickel alloy by impingement cooling and reducing said cooling at the exit temperature range of a ductility trough.
- 4. Group I is independent and distinct from Group II because different process steps are recited with different objectives. Group I requires localized or zone cooling in two different sections with different cooling rates whereas Group II is directed to cooling a nickel alloy in one section as it exits and at one rate.
- 5. Moreover group I is classified in class 148/644 whereas group II is classified in class148/675. Hence Group I and II have separate classification, separate status in the art, and different field of search.

The requirement is still deemed proper and is therefore made FINAL.

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Claim Rejections - 35 USC § 103

- 6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 7. Claims1-3,5-10,12-33, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bunge (US Patent 6,394,793).

Response to Arguments

8. Applicant's arguments filed June 3, 2004 have been fully considered but they are not persuasive.

It was argued that Bunge does not disclose impingement cooling simply because he uses a compression gas at different pressures, and that higher pressure does not necessarily suggest higher cooling rate. It is the examiner's position that Bunge on lines 20-25 in column 8 discloses faster cooling with compressed air up to 100psig which is similar to the present invention because applicant's specification on pages 7 and 8, paragraph 48 discloses faster cooling rates are achieved with compressed air at pressures of 45 and 75 psig. Since compressed air with similar cooling pressures are used, then present invention would not patentably distinguish over prior art.

It was argued that Bunge fails to disclose or suggest that the cooling step produces heat transfer coefficients greater than those created by oil bath quenching. In fact, Bunge appears to suggest the opposite since figure 4 of

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Bunge provides cooling rates for oil bath quenching and Figure 5 of Bunge provides cooling rates for air quenching, and the rates for oil bath quenching are higher than for air quenching. It is the examiner's position that this is merely applicant's statement without any convincing evidence. To distinguish claims 31-33 over prior art, applicant will need to submit a declaration to show that cooling rates are equivalent and correlate with heat transfer coefficients, and to convert cooling rate to heat transfer coefficient to show that heat transfer coefficients of Bunge are not greater than those created by an oil bath quenching.

In regard to newly submitted claim 37, Bunge teaches a method of coolin a metallic work piece which can broadly include Ni alloy.

In regard to newly submitted claim 38, Bunge on lines 25 to 35 can control impingement cooling rate depending on pressure values and the type of cooling medium, and to reduce cooling rate when alloy exits would be a matter of choice well within the skill of the art and obvious to incorporate with the Bunge method.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Deborah Yee // Primary Examiner Art Unit 1742